

OTAI SPECIAL STEEL is O2 steel stockholders and suppliers from china. more 16 years experience in AISI O2 tool steel round bar, flat bar and plate supply.

AISI O2 Steel is a high quality Cold work tool steel, It belong to the high quality high carbon alloy tool steel. Oil Quenched & Tempered Hardenss is 28-34 HRC. AISI O2 steel Annealing delivery hardenss less than 250HB.

Related Specifications ASTM A29/A29M DIN EN 10083/3 JIS G4053 GB GB/T 3077

Form of Supply

AISI o2 tool steel, we can supply the round bar, steel flat bar, plate, hexagonal steel bar and steel square block. AISI o2 steel Round bar can be sawn to your required lengths as one offs or multiple cut pieces. O2 steel Rectangular pieces can be sawn from flat bar or plate to your specific sizes. Ground tool steel bar can be supplied, providing a quality precision finished bar to tight tolerances.



Round



sheet



Square



Plate

Chemical composition

C(%)	0.85~ 0.95	Si(%)	≤0.50	Mn(%)	1.40~ 1.80	P(%)	≤0.030
S(%)	≤0.040	Cr(%)	≤0.50	Mo (%)	≤0.30	V(%)	≤0.30

Heat treatment Related

① Annealing of O2 Tool steel

Slowly heated to 720-760 °C (1328-1400°C) and allow enough times, let the steel to be thoroughly heated, Then cool slowly in the furnace. The o2 tool steel will get MAX 250 HB (Brinell hardness) .

② Hardening of o2 tool steel

O2 steels should be heated uniformly to 790–820° C (1454–1508° F) until completely heated through. If needed, the steels can be preheated at 300–500° C (572–932° F). About 30 min/per 25 mm of ruling section is to be provided and then the steels should be immediately quenched in oil.

③ Tempering of o2 tool steel

Tempering of O2 steels is performed at 100–400° C (212–752° F), Soak well at the selected temperature and soak for at least one hour per 25mm of total thickness. Get Rockwell C hardness of 50 to 64.

Temperature [°C]	100	150	200	250	300	400
Hardness [HRc]	64-63	63-62	62-61	60-59	56-55	50-49

Mechanical Properties

The mechanical properties of O2 tool steels are outlined in the following table.

Poisson's ratio	Elastic modulus	Thermal expansion	Yield (0.2%, hardened to 60 HRC)	Yield (0.2%, hardened to 62 HRC)	Yield (0.2%, hardened to 50 HRC)
T (25° C) 0.27–0.30	T (25° C) 27557–30458 ksi	T (20–100° C) $11.2 \times 10^{-6}/^{\circ}\text{C}$	Mpa 2150	Mpa 2200	MPa 1350

Applications

O2 steels are mainly used for short run tooling for cold forming dies, blanking dies, and cutting tools operating at ambient temper.

O2 tool steel typical applications include medium run dies, intricate press tools, drawing punches, broaches, bushings, lathe centres, chuck jaws, master cavity sinking hobs, paper cutting machine knives, plug gauges, thread gauges and precision measuring tools. Also

commonly used in applications such as cams, cloth cutting knives, cold taps, reamers, collets, cutting hobs, strip slitting cutters, trimmer dies, tube expander rolls, plastic moulds and woodworking knives ature.

Regular size and Tolerance

1) Hot Rolled round bar

Diameter (mm)	Diameter Tolerance (mm)	Diameter (mm)	Diameter Tolerance (mm)
≤12.70	-0.13 ~0.30	>50.80~63.5	-0.25~0.76
12.7~25.40	-0.13~0.41	>63.50~76.20	-0.25~1.02
>25.4~38.10	-0.15~0.51	>76.20~101.60	-0.30~+1.27
>38.1~50.80	-0.20~0.64	>101.60~ 203.20	-0.38~3.81

2) Hot Rolled steel plate

Thickness (mm)	Thickness Tolerance (mm)	Thickness (mm)	Thickness Tolerance (mm)
≤25.4	-0.41~0.79	>127~152	-1.60~2.39
>25.4~76	-0.79~1.19	>178~254	-1.98~3.18
>76~127	-1.19~1.60	>254~305	-2.39~3.96

Others O2 have not specified size, pls [contact](#) our experienced sales team.

[Processing](#)

AISI o2 tool steel round bar and flat sections can be cut to your required sizes. O2 tool steel ground bar can also be supplied, providing a high quality tool steel precision ground tool steel bar to your required tolerances. AISI o2 steel is also available as Ground Flat Stock / Gauge Plate, in standard and nonstandard sizes.

Contact our experienced sales team to help you with your o2 tool steel questions and enquiry by [Email](#) or Telephone. The questions will be reply in 24 hours.

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